The Projected Economic Impacts of Proposed Improvements at Sikorsky Airport

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Executive Summary

This study evaluates the economic impact of a proposed redevelopment of core facilities at Igor I. Sikorsky Memorial Airport. The Aircraft Facilities Group, LLC, has put forward a proposal to redevelop a portion of Sikorsky Memorial Airport into a multi-use aviation and business center. This study examines only the first two phases of this multiphase redevelopment. These include the construction of a premier headquarters for Volo Aviation (Volo), a North American headquarters for PrivatAir Group Limited (PrivatAir), and improvements to traffic airport circulation and aesthetics. These enhancements will significantly improve airport facilities, and, more critically, will insure the retention and future operation of these leading aircraft charter and management firms at Sikorsky Memorial Airport. These strategic investments will generate significant economic benefits for the City of Stratford and the region.

Projected impacts of the proposed redevelopment include:

- **The creation of 249 new jobs, including an estimated 79 in Stratford;**
- **Generate $132 million in gross regional product (GRP) in Fairfield County, including an estimated $42 million in Stratford;**
- **Generate $39 million in personal income in Fairfield County, including an estimated $12 million in Stratford;**
- **Generate $214 million in output (sales) in Fairfield County, including an estimated $68 million in Stratford.**
- **Generate $24 million in tax revenue to the State of Connecticut**
- **Generate an estimated $204,423 in new tax revenue for the Town of Stratford**

	Fairfield County			
	Average	**Peak**	**Bridgeport**	**Stratford**
Employment	232.5	248.9	94.0	78.7
GRP	$70.8 M	$132.3 M	$49.9 M	$41.8 M
Personal Income	$25 M	$38.8 M	$14.6 M	$12.2 M
Output	$114.6 M	$214 M	$80.8 M	$67.6 M
State Tax Revenue	$16.2 M	$23.9 M	n/a	n/a
Local Tax Revenue	$221,562	$353,662	$319,178	$204,423

In addition to the tangible economic impacts outlined above, the development of improved air transportation at Sikorsky will also deliver a variety of qualitative impacts to the region. Research has established that readily available access to an airport increases productivity, enhances competitiveness, and serves as an impetus to future economic growth. A vibrant airport, offering service to a range of destinations, is also a critical element in attracting new businesses to the Bridgeport/Stratford region. The presence of an airport serves to attract new investment to the region, aids in retaining established businesses, allows for the expansion of existing companies, promotes success by granting companies the links to key markets to export goods and services, and enhances competitiveness through the provision of fast, efficient, cost effective transportation. "While airports play an important role in terms of their direct and indirect contribution, their most important function is in stimulating the generation of wealth from other industries. Efficient transport is crucial for economic competitiveness."[1]

These considerations are of special note because of the Stratford Army Engine Plant (SAEP), largely vacant for nearly twelve years. The presence of a vibrant regional airport that is home to top tier corporate air charter and leasing operations will enhance the attractiveness of SAEP for a host of potential tenants. The following report lays out in detail the impact of a facility such as Sikorsky can have on regional competitiveness.

[1] "The Projected Impact of Vernon Regional Airport" Prepared by GHK September 2006, available at: http://www.vernon.ca/business/airport/Economic%20Impact%20Assessment%202006%20Final%20Report.pdf

Introduction

This study evaluates the economic impact of a proposed redevelopment of core of facilities at Igor I. Sikorsky Memorial Airport. The Aircraft Facilities Group, LLC, has put forward a proposal to redevelop a portion of Sikorsky Memorial Airport into a multi-use aviation and business center. This study examines only the first two phases of this multiphase redevelopment. These include the construction of a premier headquarters for Volo Aviation (Volo), a North American headquarters for PrivatAir Group Limited (PrivatAir), whose current facilities are inadequate, and improvements to traffic airport circulation and aesthetics. These enhancements will significantly improve airport facilities, and, more critically, will insure the retention and future operation of these leading aircraft charter and management firms at Sikorsky Memorial Airport. These strategic investments will generate significant economic benefits for the citizens of the City of Stratford and the region.

To analyze the economic impact of the proposed redevelopment, the Aircraft Facilities Group contracted with the University of Connecticut's Center for Economic Analysis (CCEA) to conduct an economic impact study. Using a dynamic economic model (REMI)[2], a model that replicates the actual behavior of the Connecticut economy, CCEA is able to project the impact the redevelopment will have on the local economy. This study forecasts the impact of the combined phases I and II of this proposed redevelopment on employment, personal income, gross regional product, and total output in Fairfield County. The study then allocates the county-level impacts to the municipal level, projecting the benefits that the City of Stratford will capture from these improvements at Sikorsky Airport; it would capture nearly one-third of the total regional impact.

The main focus of phase I consists of the construction of Volo Aviation's world headquarters. A 15,000 square foot, two-story terminal building containing operations, management and tenant offices will replace existing terminal buildings. Phase I will includes construction of a 40,000 square foot fixed based operation hangar which will utilize the existing aircraft ramp and apron as well as provide transient tie-down space. Additional features of Phase I consist of construction of an access loop road, parking, walkways, lawn restoration, and site lighting.

[2] For more information on the REMI model see Appendix A

Phase II will focus on construction of PrivatAir's North American headquarters, a new 25,000 square foot office and passenger facility. Phase II will include two 30,000 square foot hangars that will serve as a combined transient based operation and full service fixed based operation facility. Construction of a new aircraft apron parallel to runway 11-29, along with other infrastructure improvements, will facilitate use of these buildings. Phase II will also include construction of a secondary service loop road, dedicated parking, walkways, and site lighting.

Economic Impacts

Air transportation projects, such as the proposed redevelopment at Sikorsky Airport, contribute to their region's economy in ways that go beyond the pecuniary aspects of an average local business. Of course, basic economic components are still an important part of its role in the community, but there are other aspects of its involvement that, while difficult to quantify directly, still have significant impacts on the surrounding region. Development of air transportation generates economic impacts through the following vectors:

Direct Impacts: Almost anything that brings "new" money into the region due to the presence of the proposed redevelopment counts as a direct impact of that development. This includes an increase in employment opportunities, sales from support activities such as an eating establishment or even a newsstand, and purchases of goods and services from off-site area vendors.

Visitor Spending Impacts: Some air transportation passengers stay in overnight lodging, patronize local eating and drinking establishments, visit other nearby cultural attractions, shop at retail establishments, and so on. In doing so, they increase spending in Connecticut and provide a significant boost to the local economy.

Indirect Impacts: Volo, PrivatAir, and businesses that generate visitor spending then purchase goods and services from other area businesses to support their operations. This cascading increase in business activity causes area businesses to hire more employees, upgrade facilities, purchase more inputs (goods and services) from other Connecticut firms, and so on. For example, when passengers purchase meals from a local restaurant, the restaurant owner increases purchases from the local bakery. The local bakery purchases more fresh eggs and flour from wholesalers. The wholesaler in turn increases his purchases to accommodate the increased demand. These indirect impacts lead to quantifiable increases in the market activity in surrounding communities.

Induced Impacts: Increases in employment due to expansion by Volo and PrivatAir, both direct and indirect, creates additional disposable income that area households have to spend. This leads to increased spending on a wide range of consumer goods and services unrelated to air transportation, including such areas as utilities, housing, and entertainment. Therefore, the economic impact of air transportation companies such as Volo and PrivatAir spread out broadly, benefiting the entire economy.

Intangible Impacts: The benefits of the proposed redevelopment enumerated above are tangible; measuring them typically is relatively direct. But some of the most important impacts of air transportation are intangible and qualitative; the approach outlined above fails to include them. A wide array of studies document the positive externalities—the benefits that the presence of quality air services generate that can not be linked directly to their economic activities—air transportation has on the surrounding economy, yet measuring their impact with any precision is difficult. Aviation is America's dominate intercity mode of transportation for those passengers and goods which must be transported quickly and efficiently.[3] This is particularly true in the New England region which generates 2.5 air passenger trips per year per capita, nearly 80% higher than the national average of 1.4.[4] The national report on the economic impact of civil aviation, prepared for the Federal Aviation Administration, offers perhaps the strongest statement on the important impact air transportation has on its area economy. The FAA argues that "aviation is America's not-so-secret weapon in the battle to retain world economic leadership in the era of global competition."[5]

A primary benefit of the development of air transportation is that access to an airport increases productivity, enhances local competitiveness, and serves as an impetus to future economic growth. These higher rates of productivity and economic growth are made possible by air transportation's ability to integrate markets and save time in the movement of passengers and freight[6]. A recent study by the International Air Transportation Association highlights "connecting businesses to global markets is vital for business productivity and economic growth…and new research shows a clear link between a country's business productivity and its connectivity to global markets"[7] Air

[3] "Economic Impact of Civil Aviation U.S. Economy – 2000" Wilbur Smith Associates www.wilbursmith.com
[4] The New England Regional Airport Support Plan
[5] "Economic Impact of Civil Aviation U.S. Economy – 2000" Wilbur Smith Associates www.wilbursmith.com
[6] "The Potential Economic Impacts of Reducing the Federal Government's Ground Rents for Toronto Pearson International Airport and Reducing the Excise Tax on Aviation Fuel" by Dr. Fred Lazar Toronto available at: http://www.atac.ca/en/files1/Lazar%20report%20final%20v%20Feb%205.doc
[7] International Air Transportation Association study available at:

transportation also lowers barriers to mobility and increases spatial flexibility, which in turn reduces costs of production and distribution[8]. Additionally, the availability of air transportation allows for cost savings in the transportation of people and goods. Transportation expenditures comprise approximately 8 percent of U.S. GDP; by reducing transportation costs, businesses capture savings that can be reinvested through lower prices on existing products, in improving product design or production methods, or redistributed to shareholders, which is then reinvested throughout the economy.[9]

A vibrant airport offering service to a range of destinations is also key component in attracting new businesses to a region. "With the need to travel at short notice and usually under great time constraints, businesses must depend on an efficient airport to guarantee that they get to their destination in the shortest period of time at the lowest price possible."[10] A recent study by the Wisconsin Department of Transportation confirms the link between air transportation and economic growth, pointing to the fact that between 1997 and 2001 over 85% of new or expanded manufacturing businesses were located within 15 miles of an airport capable of handling corporate jets.[11] In fact, "a region cannot be marketed as a centre for establishing major new business unless it has efficient air transportation infrastructure, and will never attract major investment."[12] A study prepared for the Vernon Regional Airport Authority (British Columbia) aptly summarizes important economic impacts of air transportation development. The presence of an airport serves to attract new investment to the region, aids in retaining established businesses, allows for the expansion of existing companies, promotes success by granting companies the links to key markets to export goods and services, and enhances competitiveness through the provision of fast, efficient and cost effective transportation. "While airports play an important role in terms of their direct and indirect contribution, their most important function is in stimulating the generation of wealth from other industries. Efficient transport is crucial for economic competitiveness."[13]

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http://www.iata.org/nr/rdonlyres/0ec6dc10-e751-4961-9b80-fe7bdc1d1c5e/0/economics.pdf

[8] "Transportation Improvements Grow Wisconsin's Economy: The Economic Benefits of Transportation Investments" by Cambridge Systematics, Inc. available at: http://www.tdawisconsin.org/data/publications/CambridgeComplete.pdf

[9] *Ibid*.

[10] "A Study of the Current Economic Impact of the Blue Grass Airport on the Lexington-Central Kentucky Area" by Center for Business and Economic Research

[11] Economic Impact Marshfield Municipal Airport/Roy Shwery Field

[12] "The Projected Impact of Vernon Regional Airport" Prepared by GHK September 2006, available at: http://www.vernon.ca/business/airport/Economic%20Impact%20Assessment%202006%20Final%20Report.pdf

[13] *Ibid*.

Regional airports, such as Sikorsky Memorial Airport, impact the local economy in several ways specific to smaller airports. The percentage of intercity travelers that are on business trips increases at smaller local airports. This facilitates information exchange, which increases efficiency of the management process and reduces transaction costs. As a result, regional airports enhance market diffusion, improving the efficiency of market activity.[14] "A basic effect of improving connectivity over space, and an important factor in the economic role of local airports, is that improved communications as facilitated by air transport would de-emphasize agglomeration economies (localization economies or urbanization economies) traditionally associated with the special concentration of economic activities at the regional level. This will tend to improve the opportunities for smaller towns to attract economic activities and will increase the opportunities for local entrepreneurship, two essential factors of economic development. "[15]

The Federal Aviation Administration[16] outlines the following additional benefits of regional airports such as Sikorsky Memorial Airport. 1) Transportation benefit: The time saved and cost avoided by travelers who are able travel to a closer regional airport rather than a more distant central hub, is a benefit that accrues directly to local air travelers. 2) Congestion relief: General aviation airports not only provide access to the immediate surrounding area, they also help relieve congestion at airport hubs, a major issue quickly emerging in modern aviation management.
3) Public health benefit: Regional airports provide benefits to the community such as contributing to the prompt diagnosis and treatment of disease by allowing medical supplies, blood or tissue samples, organ transplants and patients to be rapidly transported to where they are needed. 4) Educational benefit: Regional airports provide high schools, colleges and universities the opportunity to offer classes and train young people for a career in aviation. 5) Public safety: Regional airports act as civil defense facilities and are a key source of relief from natural disasters. 6) Recreation benefit: General aviation airports are a source of recreation to the local community. Sky-diving, sightseeing tours, and flying custom built aircraft are just some of the recreational activities individuals engage in at regional airports.

All of these benefits have particular salience for Stratford, which has been struggling to redevelop the vast Stratford Army Engine Plant (58 commercial and industrial buildings with 1.7 million square

[14] "Local Air Service and Economic Impact of Small Airports" by Adib Kanafani, F. and Mahmoud S. Abbas
[15] *Ibid*.
[16] Report available at:
http://www.faa.gov/airports_airtraffic/airports/aip/bc_analysis/media/economic_significance_1992.pdf

feet), largely vacant since 1998. Redevelopment and revitalization of Sikorsky Airport would strengthen the appeal of the SAEP facilities for potential tenants alert to the competitive benefits that a quality regional airport would provide. Indeed, elevating the quality of Sikorsky has additional regional value because of the parallel development of the regional rail and bus transportation hub in Bridgeport and the advantages of the nearby deep-water port. Thus this proposal opens up unique development opportunities for the City of Stratford.

Methodology

To capture the economic impacts created by the proposed redevelopment at the Sikorsky Airport, we utilize the REMI[17] model to forecast regional effects. This model is a dynamic representation of the state and regional (county) economies that allows us to examine in detail the annual impacts of projects and policies. The model captures direct, indirect, and induced effects of the redevelopment of Sikorsky Memorial Airport on Fairfield County. Though we are not modeling impacts on other Connecticut counties, based on previous studies of the Sikorsky Memorial Airport[18] we project that Fairfield County captures nearly all of the economic benefits. This result flows from a partial substitution effect, which means that Sikorsky Airport captures some of the its new air travel from other airports of the state; however, increases in economic activity due to indirect and induced impacts offset these loses as they resonate across the state.

It is important to note that the analysis identifies "net new" impacts. More specifically, the analysis takes existing operations of Volo and PrivatAir as given and makes its projections of the economic impact based on the additional revenues, expenses, and employment that the proposed redevelopment will create. The proposed redevelopment at the Sikorsky Airport generates two distinct economic impacts, one through construction, then through on-going operations. Construction has a large but temporary effect on the local economy; the economic impact of on-going operations does not have the same initial magnitude, but provides a continuous and substantial benefit to the local economy.

Current plans call for the construction phase to begin April 2008 and end April 2009. The analysis assumes construction costs are distributed equally across this timeline and construction expenditures are made within Fairfield County. Hard costs include construction of the terminals and

[17] For more information on the REMI model see Appendix A

[18] "Modernizing the Sikorsky Memorial Airport An Economic Evaluation" by Connecticut Center for Economic Analysis available at: http://www.ccea.uconn.edu/studies/Sikorsky%20Airport%20Impact.pdf

hangars, aircraft apron, access road, and sidewalks. Soft costs include architectural and engineering costs, legal fees, and inspection costs. Aircraft Facilities Group provided estimated construction costs.

The operational phase commences immediately after conclusion of construction; it will continually generate new economic activity in Fairfield County. The analysis generates the project impacts by using several elements of economic activity, including employment, sales, and expenses; however, we carefully select which indicator is best suited to measure each impact in order to avoid double counting. Once operations begin, both Volo and PrivatAir will add new line service employees and customer service representatives. Volo and PrivatAir will also expand their fleets, adding a combined twelve aircraft. Within five years, Volo and PrivatAir will add an additional seven aircraft, bringing the total to nineteen new aircraft. As the exact deployment of the seven additional aircraft is unknown, we assume that they are spaced equally over the first 5 years of operation. We assume these firms purchase these aircraft outside of Connecticut; therefore their purchase has no impact on the Connecticut economy. However, each aircraft requires hiring one additional maintenance worker and three flight crew members. In addition to new employees to fly and service the aircraft, Volo and PrivatAir plan to hire fifteen additional office workers to plan and oversee operations.

To complement the expansion of the aircraft fleets of Volo and PrivatAir, several retail services will expand or open in the new Sikorsky facilities. Volo and PrivatAir anticipate sales of $150,000 a year in additional catering to accommodate the increased number of passengers. A newsstand and coffee kiosk will open on premises, generating approximately $100,000 in sales annually. Finally, Volo and PrivatAir anticipate annual sales of $125,000 in aircraft cleaning services. Where appropriate, the modeling includes the impact of competition with existing local firms; as a result, the REMI model reduces projected new retail sales 27.5% in recognition of this factor.[19]

Results

The analysis forecasts the economic impact of the proposed redevelopment at Sikorsky Memorial Airport on Fairfield County. Though the REMI model does not directly allocate impacts at geographies smaller than the county level, we are able to estimate the distribution of these impacts

[19] For the retail sector, to calculate the economic impact, REMI requires the % of total retail price captured locally. 72.5% is what remains after subtracting 14.2% for producers profit, 13% for wholesalers, and 3% for shipping. Percentages taken from IMPLAN User's Guide.

across towns within Fairfield County. Following the analysis of a previous report for economic impacts resulting from Sikorsky Memorial Airport[20], this analysis uses a gravity model that considers economic power and distance from the airport to capture economic impact by town. Though this does not provide precise distribution of economic impacts, it is an approach that offers reasonable estimates. Figure 1 presents these results.

Figure 1

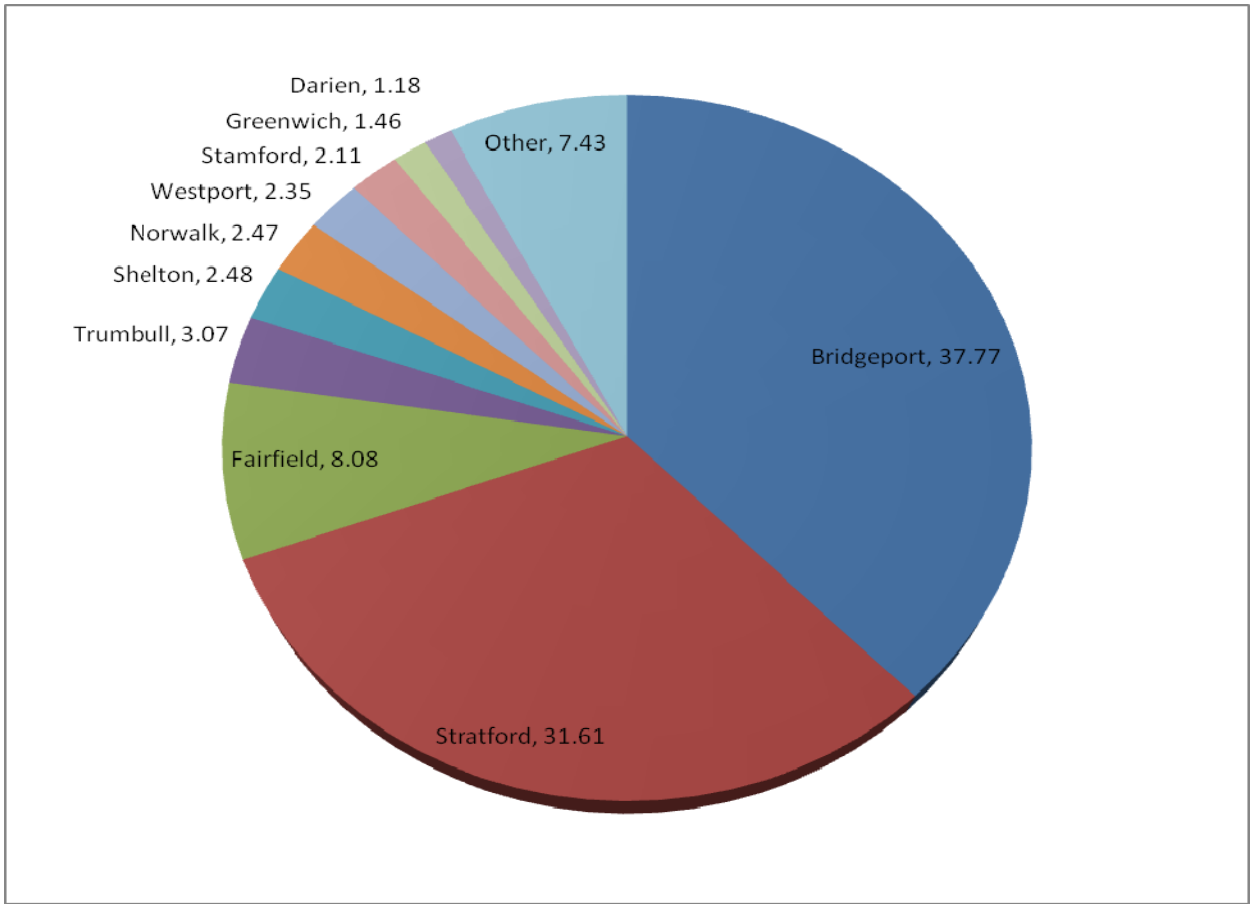


Table 1 summarizes the impact the redevelopment of Sikorsky Memorial airport will have on Fairfield County as a whole, the Town of Stratford, and the remaining towns in the region (Stratford and Bridgeport understandably capture more than two-thirds of the economic benefits that this project generates). It is, however, important to note that the REMI model forecast only the aggregate regional economic impact; the regional allocation offered above results from a conjunction of the results of the REMI results and the gravity model. As all variables reach their peak value in the last year of the study,

[20] "Modernizing the Sikorsky Memorial Airport An Economic Evaluation" by Connecticut Center for Economic Analysis available at: http://www.ccea.uconn.edu/studies/Sikorsky%20Airport%20Impact.pdf

the study reports both the average values over the study period and peak values. The employment figures give the number of new jobs the proposed develop creates. Gross regional product measures the increase in value of all goods and services produced in the region in a year on a value added basis; it thus measures overall economic activity. Personal income captures the increase in aggregate income all Fairfield residents will earn and serves as a measure of overall well-being. Output measures the increase in total sales, which includes gross regional product as well as intermediate sales. Tax Revenue measures additional tax revenue generated by the redevelopment project at both the state and local level. In addition to pure tax revenues, included in our calculations are separate payments made to local municipalities. In this scenario, the City of Bridgeport receives land lease payments on the property, and the Town of Stratford receives payment in lieu of taxes equal to the value of property tax calculated at $.2698 mill rate minus the payments made to Bridgeport.

Table1

	Fairfield County			
	Average	**Peak**	**Bridgeport**	**Stratford**
Employment	232.5	248.9	94.0	78.7
GRP	$70.8 M	$132.3 M	$49.9 M	$41.8 M
Personal Income	$25 M	$38.8 M	$14.6 M	$12.2 M
Output	$114.6 M	$214 M	$80.8 M	$67.6 M
State Tax Revenue	$16.2 M	$23.9 M	n/a	n/a
Local Tax Revenue	$221,562	$353,662	$319,178	$204,423

Figure 2 illustrates the impact the redevelopment of Sikorsky Memorial Airport will have on employment. The employment figures show the number of new jobs created in the region. Construction creates the initial surge in employment. Then, as Volo and PrivatAir increase their fleet of aircraft, employment grows by 249 jobs. After 2013, as the operational phase gains traction, employment varies slightly before stabilizing at the 249 level by 2032.

Figure 2

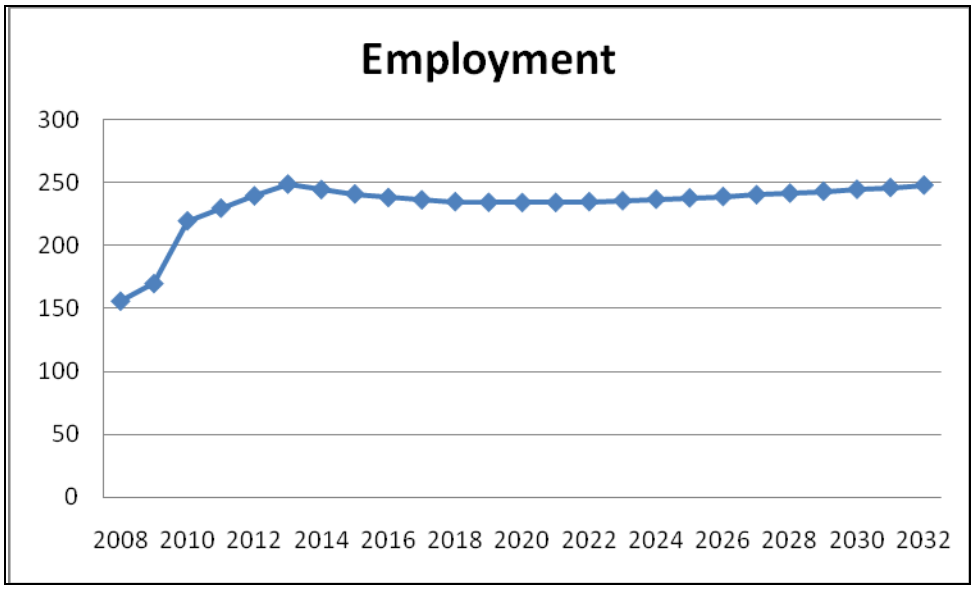


Figure 3 illustrates the impact the redevelopment of Sikorsky Memorial Airport will have on Gross Regional Product. Gross regional product grows steadily over the entire study period, illustrating the redevelopment will provide an enduring boost to economic activity in the region. The gross regional product peaks at the end of the study period, reaching a value of $132 Million.

Figure 3

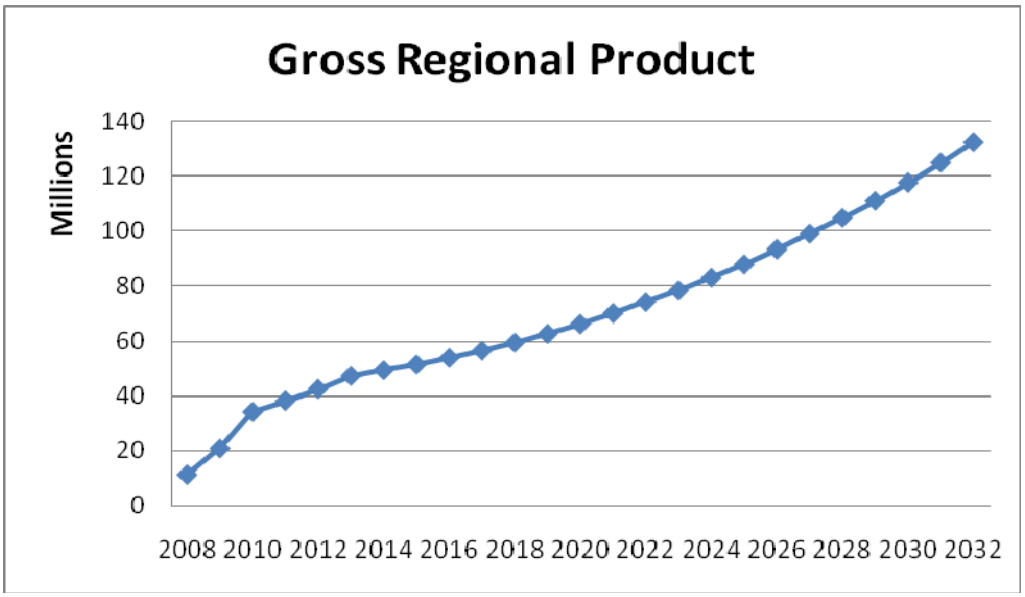


Figure 4 illustrates the impact the redevelopment of Sikorsky Memorial Airport will have on personal income. Personal income grows steadily over the entire study period. This translates to a steady increase in the well being of area residents, which reaches a peak of $38 Million in 2032.

Figure 4

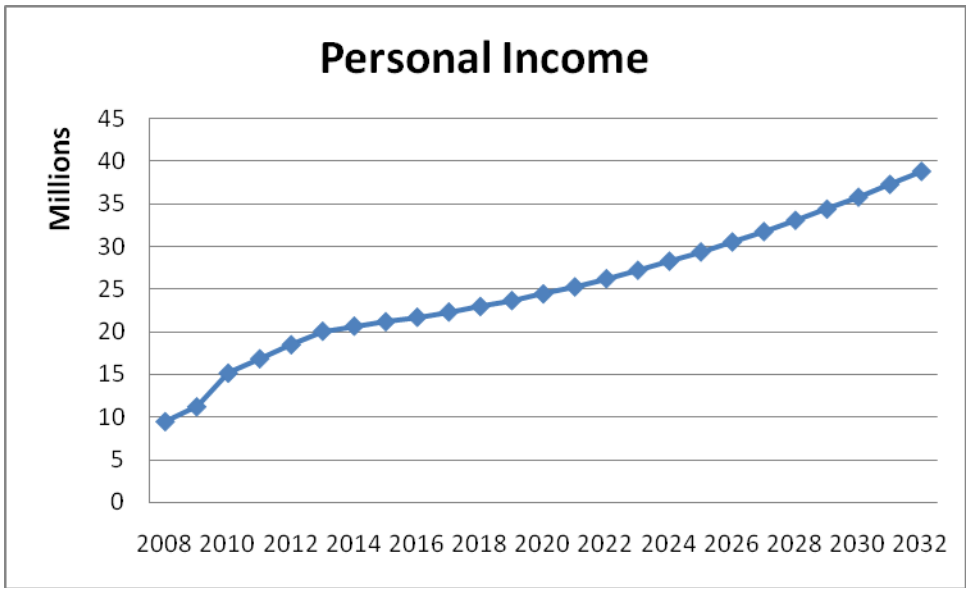
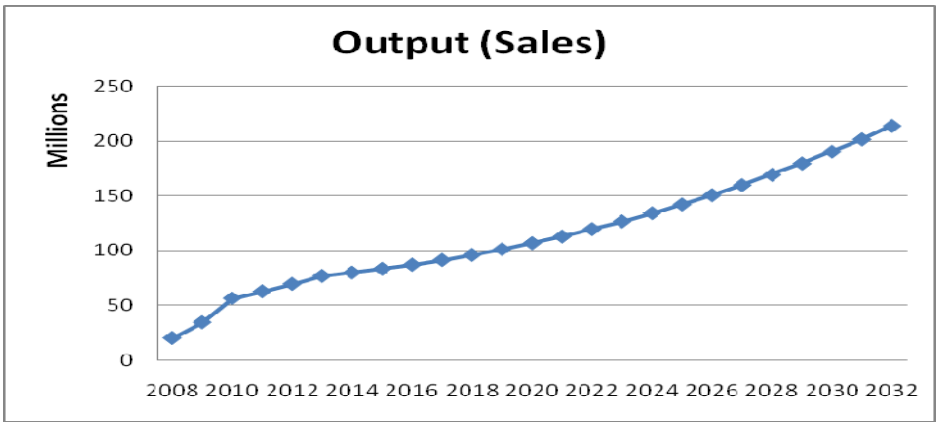


Figure 5 illustrates the impact the redevelopment of Sikorsky Memorial Airport will have on output (sales). Like gross regional product, output grows relatively steadily over the entire study period. Output peak value occurs at the end of the study period, reaching $214 Million.

Figure 5



Figures 6 and 7 illustrate the impact of state and local tax revenue respectively. State tax revenues increases significantly once the operation phase begins in 2010. State tax revenues reaches a peak of nearly 24 million in 2032. Local tax revenues increase at a relatively steady rate across the study period, reaching a peack of over $630,000 in 2032.

Figure 6

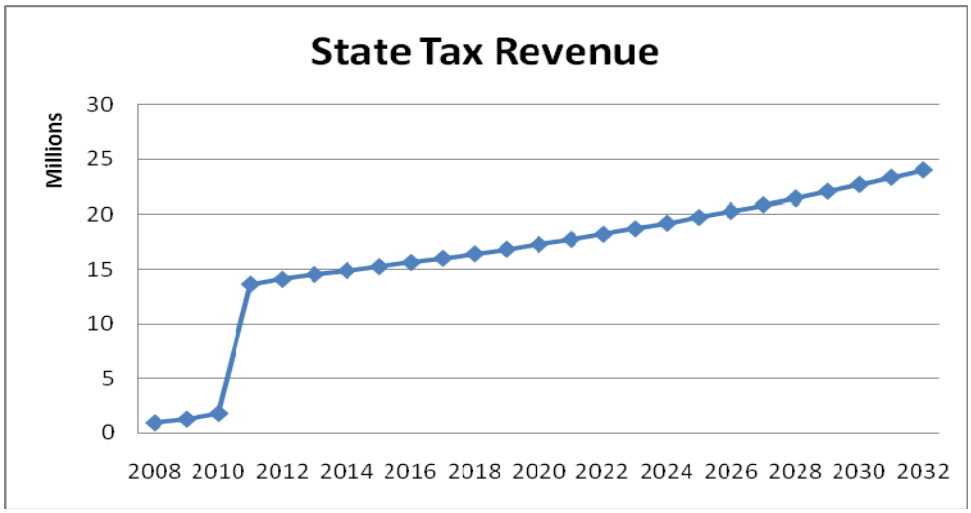
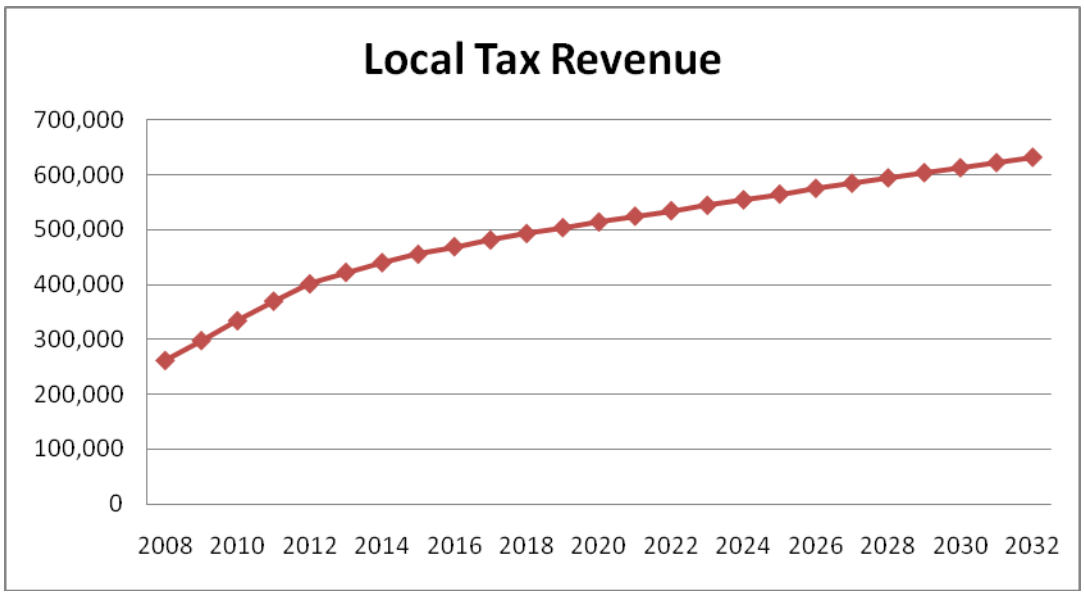


Figure 7



This analysis provides strong evidence of the value of the proposed initiative at Sikorsky Airport. It clearly will benefit the regional and state economy directly through new jobs, income, and output. It will also strengthen the competitive position of the Stratford region and in all likelihood enhance the attractiveness of the Stratford Army Engine Plant. Critically, it will also contribute directly to the revenue stream that supports the City of Stratford and the municipal services so important to its citizens.

Appendix A: Description of REMI model

REMI is a dynamic, multi-sector, regional model used as an analysis tool by the Connecticut Center for Economic Analysis. The REMI model includes all of the major inter-industry linkages among 466 private industries aggregated into 49 major industrial sectors. With the addition of farming and three public sectors (state and local government, civilian federal government, and military), there are 53 sectors represented in the model.

The REMI model is based on a nationwide *input-output* (I/O) model that the U.S. Department of Commerce (DoC) developed and continues to maintain. Modern input-output models are largely the result of groundbreaking research by Nobel laureate Wassily Leontief. Such models focus on the inter-relationships between industries, and provide information about how changes in specific variables—whether economic variable such as employment or prices in a certain industry or other variables like population—affect factor markets, intermediate goods production, and final goods production and consumption.

The REMI Connecticut model takes the U.S. I/O "table" results and scales them according to traditional regional relationships and current conditions, allowing the relationships to adapt dynamically at reasonable rates to changing conditions. Some of the salient structural characteristics of the REMI model are:

- Consumption is determined on an industry-by-industry basis, and is based on real disposable income in Keynesian fashion, i.e., with prices fixed in the short run and GDP (Gross Domestic Product) determined solely by aggregate demand.

- The demand for labor, capital, fuel, and intermediate inputs per unit of output depends on relative prices of inputs. Changes in relative prices cause producers to substitute cheaper inputs for relatively more expensive inputs.

- Supply and demand for labor in a sector determine wages weighted by regional differences. The supply of labor depends on the size of the population and the size of the workforce.

- Migration – which affects population size – depends on real after-tax wages as well as employment opportunities and amenity value in a region relative to other areas.

- Wages and other measures of prices and productivity determine the cost of doing business. Changes in the cost of doing business will affect profits and/or prices in a given industry. When the change in the cost of doing business is specific to a region, it will also affect the share of local and U.S. markets supplied by local firms. Market share and demand determine local output.

- "Imports" and "exports between states are related to relative prices and relative production costs.

- Property income depends only on population and its distribution adjusted for traditional regional differences, *not* on market conditions or building rates relative to business activity.

- Estimates of transfer payments depend on unemployment details of the previous period, and total government expenditures are proportional to population size.

- Federal military and civilian employment is exogenous and maintained at a *fixed* share of the corresponding total U.S. values, unless specifically altered in the analysis.

Because the variables in the REMI model are all related, a change in any one variable affects many others. For example, if wages in a certain sector rise, the relative prices of inputs change and may cause the producer to substitute capital for labor. This changes demand for inputs, which affects employment, wages and other variables in those industries. Changes in employment and wages affect migration and the population level, which in turn affect other employment variables. Such chain-reactions continue throughout the model. Depending on the analysis performed, the nature of the chain of events cascading through the model economy can be as informative for the policymaker as the final aggregate results. Because the model generates such extensive sectored detail, it is possible for experienced economists in this field to discern the dominant causal linkages involved in the results. Results reported are the combined direct, indirect and induced effects of the economic activity.